

Title (en)
REMOVAL OF HYDROGEN IMPURITY FROM GAS STREAMS

Title (de)
ENTFERNUNG VON WASSERSTOFFVERUNREINIGUNG AUS GASSTRÖMEN

Title (fr)
ÉLIMINATION D'IMPURETÉS D'HYDROGÈNE DANS DES FLUX GAZEUX

Publication
EP 3991826 B1 20240612 (EN)

Application
EP 21204594 A 20211025

Priority
US 202017083435 A 20201029

Abstract (en)
[origin: US11173451B1] Trace hydrogen may be removed from a dry gas by passing the dry gas at a temperature from about 0° C. to about 60° C. through at least one layer of a first hopcalite catalyst to produce product gas that is at least substantially free of hydrogen, wherein the first hopcalite catalyst has a molar ratio of copper to manganese of more than 0.55. Advantages include increase hydrogen capacity, lower feed and regeneration temperatures and lower sensitivity to carbon dioxide than equivalent processes using standard hopcalite catalyst having a Cu/Mn molar ratio from 0.45 to 0.55.

IPC 8 full level
B01D 53/04 (2006.01); **B01D 53/047** (2006.01); **B01D 53/26** (2006.01); **B01D 53/75** (2006.01); **B01D 53/82** (2006.01); **B01D 53/86** (2006.01); **B01J 20/06** (2006.01); **B01J 20/28** (2006.01); **B01J 20/34** (2006.01); **B01J 23/00** (2006.01); **B01J 23/889** (2006.01); **B01J 35/63** (2024.01); **B01J 35/64** (2024.01); **C01G 45/00** (2006.01)

CPC (source: CN EP KR US)
B01D 53/0423 (2013.01 - EP); **B01D 53/0462** (2013.01 - CN); **B01D 53/26** (2013.01 - CN); **B01D 53/261** (2013.01 - EP); **B01D 53/46** (2013.01 - CN); **B01D 53/62** (2013.01 - CN); **B01D 53/75** (2013.01 - EP); **B01D 53/82** (2013.01 - EP); **B01D 53/86** (2013.01 - CN KR); **B01D 53/864** (2013.01 - CN EP US); **B01D 53/8671** (2013.01 - US); **B01D 53/869** (2013.01 - US); **B01D 53/96** (2013.01 - US); **B01J 20/06** (2013.01 - EP); **B01J 20/28052** (2013.01 - EP); **B01J 20/28057** (2013.01 - EP); **B01J 20/3433** (2013.01 - EP); **B01J 20/3483** (2013.01 - EP); **B01J 23/8892** (2013.01 - EP KR US); **B01J 35/615** (2024.01 - US); **B01J 35/633** (2024.01 - EP US); **B01J 35/647** (2024.01 - EP); **C01B 21/02** (2013.01 - KR); **C01B 21/0416** (2013.01 - CN); **C01G 45/00** (2013.01 - EP); **C01G 45/12** (2013.01 - US); **C10K 1/00** (2013.01 - KR); **B01D 53/0462** (2013.01 - EP); **B01D 53/047** (2013.01 - EP); **B01D 2253/104** (2013.01 - EP); **B01D 2253/108** (2013.01 - EP); **B01D 2253/1124** (2013.01 - EP); **B01D 2255/2073** (2013.01 - CN EP US); **B01D 2255/20761** (2013.01 - CN EP US); **B01D 2255/904** (2013.01 - US); **B01D 2255/9205** (2013.01 - US); **B01D 2255/9207** (2013.01 - US); **B01D 2256/10** (2013.01 - CN EP); **B01D 2257/108** (2013.01 - CN EP US); **B01D 2257/502** (2013.01 - EP US); **B01D 2257/504** (2013.01 - EP); **B01D 2257/80** (2013.01 - CN EP); **B01D 2258/06** (2013.01 - EP); **B01D 2259/40088** (2013.01 - EP); **B01D 2259/4145** (2013.01 - EP); **B01D 2259/4146** (2013.01 - EP); **C01B 2210/005** (2013.01 - CN); **C01B 2210/0053** (2013.01 - CN); **C01P 2006/12** (2013.01 - EP US); **C01P 2006/14** (2013.01 - EP US); **C01P 2006/16** (2013.01 - EP); **Y02C 20/40** (2020.08 - EP); **Y02P 20/151** (2015.11 - EP)

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Cited by
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